

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **TAUBER et. al**

Parent Application Serial No.: **09/845,108**

Parent Application Filed: **April 26, 2001**

Attorney Docket No.: **CECOM 5520**

For: **RARE EARTH METAL COMPOUNDS FOR USE IN HIGH CRITICAL  
TEMPERATURE THIN FILM STRUCTURES FOR SUPER-CONDUCTORS,  
FERROELECTRICS, PYROELECTRICS, PIEZOELECTRICS, AND HYBRIDS**

**PRELIMINARY AMENDMENT**

**AMENDMENTS TO THE SPECIFICATION**

Page 1, line 11, change the Title to:

**RARE EARTH METAL COMPOUNDS FOR USE IN HIGH CRITICAL  
TEMPERATURE THIN FILM STRUCTURES FOR SUPER-CONDUCTORS,  
FERROELECTRICS, PYROELECTRICS, PIEZOELECTRICS, AND HYBRIDS**

Page 1, line 25, delete the paragraph entitled "Continuation-In-Part" and replace the deleted paragraph with the following paragraph entitled "Divisional Application":

**DIVISIONAL APPLICATION**

This application is a divisional application of U.S. Patent Office Application Serial No. 09/845,108, entitled, "Rare Earth Metal Containing Compounds and High Critical Temperature Thin Film Superconductors, Ferroelectrics, Pyroelectrics, Piezoelectrics and Hybrids," which was filed on April 26, 2001, and designated as CECOM Docket No. 5469, as a continuation in part of U.S. Patent and Trademark Office Application Number 09/337,724, with the same title, filed on June 21, 1999, and designated as CECOM Docket No. 5433, as a continuation in part of U.S. Patent and Trademark Office Application Number 08/717,822 with the same title, filed on September 24, 1996 and designated as CECOM Docket No. 5304. That application (Serial No. 08/717,822) was a continuation in part of U.S. Patent and Trademark Office Application Number 08/333,669 entitled, "Rare Earth Metal Containing Compounds and High Critical Temperature Thin Film Superconductors, Ferroelectrics, Pyroelectrics, Piezoelectrics, And Hybrids Including the Rare Earth Metal Containing Compounds,"

filed on November 3, 1994 and designated as CECOM Docket No. 5097. The most recent continuation in part patent application (Serial No. 09/845,108) was filed on April 26, 2001 by the inventors herein, is currently pending before the U.S. Patent Office and, under 35 USC § 120, is "an application similarly entitled to the benefit of the filing date of the first application." This divisional application is being filed under 35 USC § 120, 35 USC § 121 and 37 CFR § 1.53 (b), and priority from the November 3, 1994 effective date of the first application (08/333,669) is hereby claimed.

Delete the paragraph at page 2, lines 12-14 and replace the deleted paragraph with the following replacement paragraph:

The invention relates in general to new and useful devices composed of rare earth metal containing compounds, and in particular to new uses for dielectric substrates and buffer layers in thin film structures composed of compounds of the general formula  $\text{Sr}_2\text{RESbO}_6$  where RE is a rare earth metal.

Delete the paragraph at page 12, line 14 to page 13, line 6 and replace the deleted paragraph with the following replacement paragraph:

The real part of the dielectric constant is calculated from the shift in resonance frequency of the cavity due to the sample, and the imaginary component is calculated from a change in cavity Q. The accuracy of these measurements depends upon two general sources of error: 1) ~~The~~ the accuracy of the cavity characterization; and 2) the material properties such as density and uniformity of shape. The error due to the cavity characterization results in an accuracy of approximately  $\pm 2\%$  for the real part of the dielectric constant, and limits the resolution of the loss tangent (the imaginary component divided by the real component of the dielectric constant) to approximately 0.001. The error due to material properties and sample shape can be considerably greater than the cavity characterization error, particularly the error due to low material density; hence the densities of bulk materials are reported in the Density GM/CC column of TABLE I.

Delete the paragraph at page 14, lines 8-9 and replace the deleted paragraph with the following replacement paragraph:

In addition to numerous ~~device uses~~ devices already disclosed throughout this

specification, the following examples illustrate two specific ~~uses devices composed~~ of the  $\text{Sr}_2\text{RESbO}_6$  compounds ~~of in accordance~~ with this invention.

**IN THE ABSTRACT:**

Rare earth metal containing compounds of the general formula  $\text{Sr}_2\text{RESbO}_6$ , wherein RE is a rare earth metal, have been prepared ~~with as high critical temperature dielectric substrates and buffer layers in~~ thin film superconductor ~~strucutures~~ structures, and can be used in other ferroelectrics, pyroelectrics, piezoelectrics, and hybrid device structures.